

REMARKS

The Examiner's action dated October 13, 2004, has been received, and its contents carefully noted. In order to advance prosecution, independent claim 4 has been amended to include the subject matter of claim 6, and claim 6 has, itself, has been cancelled. Claims 1-5 and 7-20 are pending.

Since the subject matter of claim 6 has been incorporated into claim 4 and claims 5 and 11-20 are all dependent from amended claim 4, it is understood that the rejection presented in section 2 of the Action has been obviated.

The rejection presented in section 3 of the Action is traversed on the grounds that no reasonable combination of the teaching of the five applied references can be considered to suggest, or render obvious, the claimed invention.

This invention is directed to a heating element, and an electric appliance incorporating the heating element, in which the parameters of the resistance wire are selected to produce a stabilization temperature substantially identical to that obtained with the aid of a separate regulation device. Specification, paragraph [0014].

This is achieved by the use of a heating wire having a relatively high temperature coefficient, which, in the current state of the art, implies a heating wire having a low

initial resistivity. A relatively low resistivity requires either that the length of the wire be increased or that the cross-section of the wire be reduced to achieve an adequate value for the resistance at ambient temperature.

Specification, paragraph [0015]. However, the obvious approaches to increasing the length of the wire would entail increasing the length of its associated tubular envelope, which results in increased manufacturing costs and an increased size of the resulting appliance. Specification, paragraph [0016].

One of the significant novel features of the present invention resides in the recognition that the desired increase in wire length can be achieved, without increasing the external dimensions of the tubular metal envelope housing the wire, by forming the wire in a spiral having an outer diameter that is greater than 0.7 times the inner diameter of the tubular envelope. Specification, paragraph [0018].

The stated ratio is larger than that which has been heretofore employed. In the prior art it has been the practice to employ resistance wires which are wound to have a diameter that is not greater than 0.6 times the inner diameter of the tubular envelope. Applicant's discovery that the wire can be wound to have a diameter that is greater than 0.7 times the inner diameter of the tubular envelope not only makes it

possible to impart to the wire the desired resistance increase as a function of temperature, but also allows the thickness of the insulator encasing the wire to be reduced, permitting the thermal transfer between the resistance wire and the tubular envelope to be increased. Specification, paragraph [0020].

It is abundantly clear that none of the references relied upon to support the prior art rejection presented in section 3 of the Action discloses or suggests the ratio originally defined in claim 1 and now also defined in amended claim 4 and the Examiner has not alleged that any of the references contain such a disclosure.

It is noted that the Examiner has alleged, in support of the rejection, that "it would have been obvious to one of ordinary skill in art to modify the diameter of the wire resistance [sic]". Of course, there is a clear difference between wire diameter, on the one hand, and the ratio between the wire diameter and the inner diameter of the tubular envelope. In point of fact, a wire can be given any arbitrarily selected large diameter, which still will be less than 0.7 times the inner diameter of the associated tubular envelope.

In fact, the Examiner has not even alleged that it would be obvious to give a resistance wire spiral a diameter

greater than 0.7 times the inner diameter of the tubular envelope.

Since the Examiner has cited no prior art evidence relating to this limitation in the last three lines of claim 1, and now in the last three lines of claim 4, the Examiner has not established a *prima facie* case of obviousness. One of the requirements for such a case is that the prior art references must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 580 (CCPA 1974), and MPEP 2142. Since there is no prior art disclosing or suggesting the ratio defined at the end of each of claims 1 and 4, and the Examiner has not even alleged that such a ratio is known in the art, it is clear that the prior art rejection does not have a proper evidentiary basis.

Many of the dependent claims define further features of the invention that are not disclosed in the prior art. Particular attention is drawn to claims 8 and 10, which specify that the wire has a resistance selected to produce an unobvious result that is clearly not disclosed in the prior art. Here again, the Examiner's explanation of the reason for rejecting claims 8 and 10, appearing at the top of page 4 of the Action, is inapposite. It should be noted that power is proportionately related to resistance only for a given current value, and this engineering fact has no relevance to the

recitations in claims 8 and 10. Particularly with regard to claim 8, the supplying of power "to meet the desired power capacity" is simply not relevant to the selection of a resistance that creates an equilibrium value corresponding to the desired operating temperature of the hotplate, or that creates the relationship defined in claim 10 between the power converted to heat by the heating element at a required temperature and the power converted to heat by the heating element at ambient temperature.

Accordingly, it is submitted that all of the claims now in the Application, and particularly independent claims 1 and 4, clearly distinguish over the applied references and it is therefore requested that the remaining prior art rejection be reconsidered and withdrawn.

Submitted herewith is an Information Disclosure Statement citing references cited in a corresponding foreign application. These references also fail to disclose the novel features discussed above.

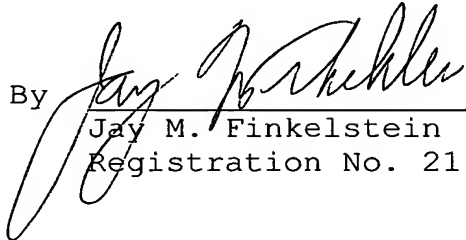
The Examiner is urged to carefully consider the language appearing in the present claims and to compare that language with the prior art.

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If the above amendment should not now place the application in condition for allowance, the Examiner is invited to call undersigned counsel to resolve any remaining issues.

Respectfully submitted,

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